

BASF Aktiengesellschaft

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We claim:

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1. A reactor having a supply of a reaction mixture via channels of a burner block in a reaction chamber, a high-temperature reaction having a short residence time taking place in the reaction chamber and the reaction mixture then being rapidly cooled in a quench area, wherein all surfaces delineating the reaction chamber are formed from a fire-resistant ceramic having an alumina content of at least 80% by weight, which is stable at reaction temperature.

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2. A reactor as claimed in claim 1, wherein the alumina content of the fire-resistant ceramic is at least 95% by weight.

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3. A reactor as claimed in claim 1, wherein the alumina content of the fire-resistant ceramic is at least 96% by weight.

4. A reactor as claimed in claim 1, wherein the fire-resistant ceramic is introduced into the reaction chamber in the form of stones or blocks or as a cast or tamped mass and then compressed, dried and calcined.

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5. A reactor as claimed in claim 4, wherein the cast or tamped mass is calcined by means of the high-temperature reaction.

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6. A reactor as claimed in claim 1, wherein the fire-resistant ceramic has a thickness in the range from 7 to 30 cm, preferably a thickness in the range from 8 to 10 cm.

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7. A method of using the reactor as claimed in claim 1 for the preparation of acetylene by partial oxidation of hydrocarbons with oxygen.